DOCUMENT RESUME

ED 156 161 IR 006 143

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TITLE Implementing Instruction on a Regional or Statewide Basis; or Once You Have a Vision, How Do You Swing Into Action?
PUB DATE Apr 78
NOTE 11p.; Paper presented at the Annual Convertion of The Association for Educational Communications and Technology (Kansas City, Missouri, April 1978); For related documents, see IR 006 144-146

EDRS PRICE MF-$0.83 HC-$1.67 Plus Postage.
DESCRIPTORS Change Strategies; Communications; Educational Change; *Educational Development; *Educational Innovation; Educational Needs; Educational Resources; Elementary Education; *Information Dissemination; Needs Assessment; *Science Education; Systems Approach
IDENTIFIERS *Science for the Seventies

ABSTRACT

Following the development of science instruction resource materials for the Pennsylvania elementary schools, a means was required to ensure that teachers would become aware of them, gain access to them, and receive assistance in their use. A six step program for instructional dissemination was developed: (1) the analysis of dissemination and implementation needs; (2) identification of communications channels; (3) determination of the capabilities of the communications channels; (4) matching of needs (step 1) to capabilities (step 3); (5) designing, developing and evaluating identified links; and (6) the assembling of all procedures into an integrated instructional system. Future plans include the development of a statewide system for instructional improvement utilizing the computer to match needs and resources. (STS)

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IMPLEMENTING INSTRUCTION ON A REGIONAL OR STATEWIDE BASIS

OR

ONCE YOU HAVE A VISION, HOW DO YOU SWING INTO ACTION?

A Presentation at the 1978 Convention
of the
Association for Educational Communications and Technology

Kansas City, Missouri
April 16-21, 1978

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

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TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC) AND USERS OF THE ERIC SYSTEM."

by

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IMPLEMENTING INSTRUCTION ON A REGIONAL OR STATEWIDE BASIS
OR
ONCE YOU HAVE A VISION, HOW DO YOU SWING INTO ACTION

In recent years, instructional developers and producers of new curriculum programs have begun to turn their attention to the design of more effective procedures for the dissemination and implementation of their instructional products. As this is being done, attention is being directed to ways of bridging the gap between the producers and the users of instructional programs.

The importance of communication in this process is one area of focus. A decade ago, Carlson (1) pointed to this factor as one which held great potential which had yet to be utilized.

> Communication has been neglected in adoption studies of educational innovations...
> ...Overall, the neglect of communication is rather awesome.

At about the same time, a connection between instructional researcher and consumer was viewed by Havelock (2) as being a "link" provided by individuals or groups.

> Any detailed consideration of dissemination and utilization of knowledge must, sooner or later, focus on the question of linking roles....The linking role argument is that this gap (between research and practice) can be bridged effectively if additional persons or groups are interposed between the two systems, these additional intermedaries being specialists in the process of linking itself.

It is this principle of the use of communications channels and key individuals and agencies to bring instructional change which served as a basis for the development of a system for statewide instructional dissemination and implementation in Pennsylvania.

The Problem

In the late 1960s, the Pennsylvania Department of Education began to search for a way in which it could assist school districts, elementary schools, and elementary school teachers in a transition toward the use of contemporary, inquiry, process-oriented science instruction. During the preceeding decade, based on intensive research and development, extensive changes had taken place in the approach to science instruction. These changes were being reflected in new curriculum materials being produced. However studies showed that these changes were slow in being implemented in the schools (3).

The result was the development of new resource materials for the schools of Pennsylvania entitled SCIENCE FOR THE SEVENTIES (SFTS) (4).

However, once the best thinking of a committee – composed of Department of Education supervisory staff, science teachers, science educators, and school administrators – was combined into the development of these resources, an awareness arose of the wide gap between the Department of Education (where these materials were housed) and the thousands of elementary school classrooms in the State. A means was required to insure that teachers would become aware of these resources, would have access to them, and would gain assistance in actual implementation and use.

The scope of the problem was magnified by the fact that the required dissemination and implementation procedures would have to encompass a state that covers a large geographic area as well as a sizeable population distributed between major cities and sparse rural areas. Furthermore, no financial resources were immediately available with which to proceed.

Procedure

In light of the scope of the target area and population, the need for utilizing far reaching communications channels and educational agencies appeared to be a necessity. Furthermore, the lack of financial resources dictated that heavy dependence be placed on the use of existing channels and structures.

As a result, a six-step plan for instructional dissemination and implementation was devised.

1. Analyze the instructional program to determine dissemination and implementation needs.

2. Identify and catalogue communications channels, educational administrative structures, and individuals that might be involved in the dissemination/implementation effort.

3. Determine the characteristics and capabilities of each potentially contributing element identified in the previous step.

4. Match instructional needs identified in step one with the resource capabilities identified in step three.

5. Design, develop, implement, and evaluate the links identified in step four.

6. Assemble all procedures evolving out of step five into an integrated instructional system.

Obviously, this plan is not appropriate for application as a strictly linear process. Rather, implementation of the plan requires a back-and-forth flow through the six steps as new insights are developed and new needs are perceived. For example, as step six is undertaken, major gaps in the overall plan will be identified which require a recycling to previous steps.

Application to SFTS

Having formulated the six-step model for approaching its task, the SFTS development committee proceeded to apply it to its goal for the dissemination and implementation of elementary school science. It is beyond the scope of this paper to provide a comprehensive account of all project activities. However, an overview of some of the highlights of the process and anticipated future directions will serve to illustrate the procedure.

Step 1

The motivation for this undertaking arose from an identified need on the part of the SFTS committee to make teachers aware of the availability of the SFTS resources and to help them implement these materials in their classrooms. It then became obvious that these two major needs were made up of numerous subcomponents dealing with publicity, teacher inservice training, materials dissemination, etc. Gradually, these subcomponents began to fall into ten general classifications (see Table 1, Area of Need) which provided a manageable framework with which to deal with each new need as it was identified.

Steps 2, 3 and 4

In May 1972, the SFTS Project Director held a meeting to begin to get a perspective of Step 2. To this meeting were invited representatives of every available communications and educational administrative channel that the SFTS committee members could think of. Included were representatives of commercial television, educational television, commercial radio, educational radio, newspapers, the telephone company, TV cable companies, school intermediate units, ITV broadcast councils, higher education continuing education services, computer assisted instruction facilities, and numerous other organizations and agencies.

During the morning session, these participants were asked to develop detailed lists of the attributes and services associated with their operation. Then in the afternoon they were told about some of the major needs of SFTS and asked to assist in determining ways in which the channels, services, or operations that they represent might be applied to the dissemination and implementation requirements of SFTS.

It is important to emphasize that this meeting was just the beginning of a process that has continued for the past six years. New relationships and applications are constantly being determined. Examples of resources and links that are being utilized are listed on Table 1 under Channel.

Step 5

Following the foundation of planning which has taken place in the first four steps, step five is the point at which the vision of the plan is formulated into action. At this point, specific elements of the need are addressed through a combination of specific resources, communications channels, agencies, and individuals.

Table 1

SFTS INSTRUCTIONAL SYSTEM

Problem	Area of Need	Channel	Target
		PDE	
		IU	
		In-Service Council	
		Broadcast Council	
		PTA	
		Public Library	
		In-Service Days	
		Newspaper Article	
		Newspaper Column	
		ETV	
		Commercial TV	
		Educational Radio	
		Cable TV	
	Community Awareness	College	
	Community Learning	University	
	Parent Awareness	Continuing Education	Community
	Parent Learning	Correspondence	Parent
	School Awareness	Telephone	School
	School Learning	Learning Package	Teacher
	Teacher Awareness	Comic Books	Child
	Teacher Learning	Class Meetings	
	Student Awareness	Curriculum Guide	
	Student Learning	State Publication	
		Teacher	
		Consultants	
		CAI	
		Dial Access	
		Video Disc	
		Textbooks	
		ITV Handbook	
		Home Learning Centers	
		Magazines	
		Museums	
		Professional Associations	

It is at this point that the complexity of the process unfolds even further. As specific procedures are developed, it is found that numerous resources and channels can be used simultaneously as a part of several plans.

For example, Table 2 presents a plan for providing teacher in-service training through one of the state in-service councils by which teachers can earn certification credit. Table 3 illustrates an in-service education procedure through which teachers in the same area of the state can achieve credit from a local college. Table 4 describes a system for teachers to learn about SFTS while earning graduate credit at the state university.

Any teacher in the particular area of the state served by these in-service mechanisms has an option to participate in any one of three plans. As a result, in a given school district, different teachers will be using different combinations of resources through different agencies to gain a common goal. Many of the resources, such as SFTS related instructional television programs, will be shared by all three plans. At the same time, these same resources will be part of numerous other plans directed at numerous other project needs!

Step 6

As individual plans are designed, developed, and tested, they are brought together into a total, integrated instructional system. Gradually sub-components of each need are addressed with greater efficiency and effectiveness. Gaps in the total system are identified and new combinations of resources and channels are matched together to satisfy these needs.

However, with the development of such a detailed system, the complexity becomes even greater. With large numbers of distinct instructional deficiencies being identified and more and more resources and channels being developed, the combination of needs and resources required for each individual teacher, school, or school district becomes increasingly difficult to identify and provide. This leads to still another procedure which is presently under development and which should be ready for piloting in the near future.

The Future

The specific needs for elementary school teaching vary tremendously from one client to another. Thus the required resources and combinations of resources also vary. As the number of identified needs and resources increases, the complexity of the process mushrooms.

A solution to this dilemma is presently underway. Resources and channels are being meticulously related to specific instructional deficiencies and entered into a computer. A diagnostic instrument is being devised which will identify existing deficiencies.

This information will then be entered into a computer and a resulting prescription will be printed out indicating alternative combinations of resources that can be applied to remedying the existing needs. With such a

Table 2

SFTS INSTRUCTIONAL SYSTEM

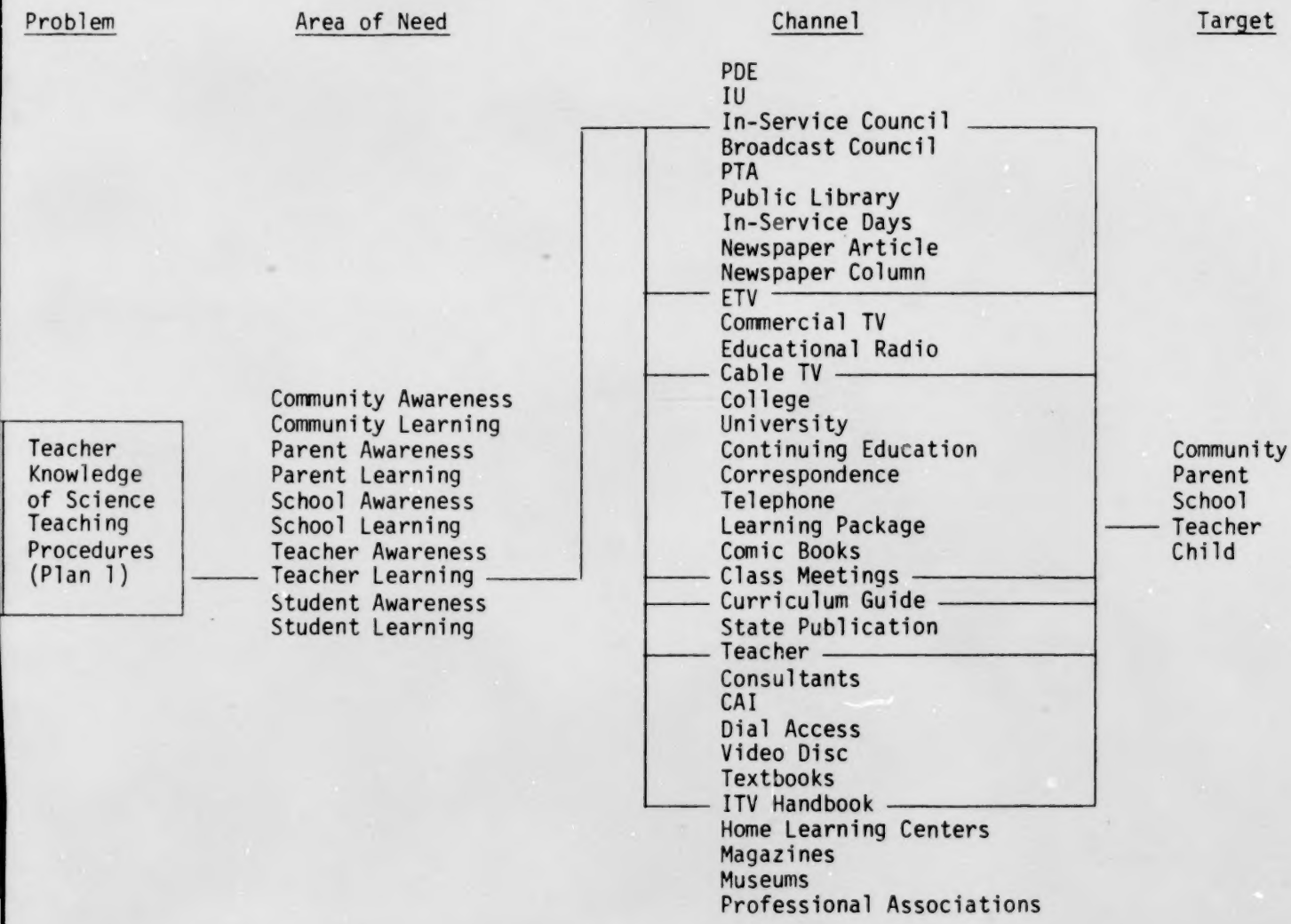


Table 3

SFTS INSTRUCTIONAL SYSTEM

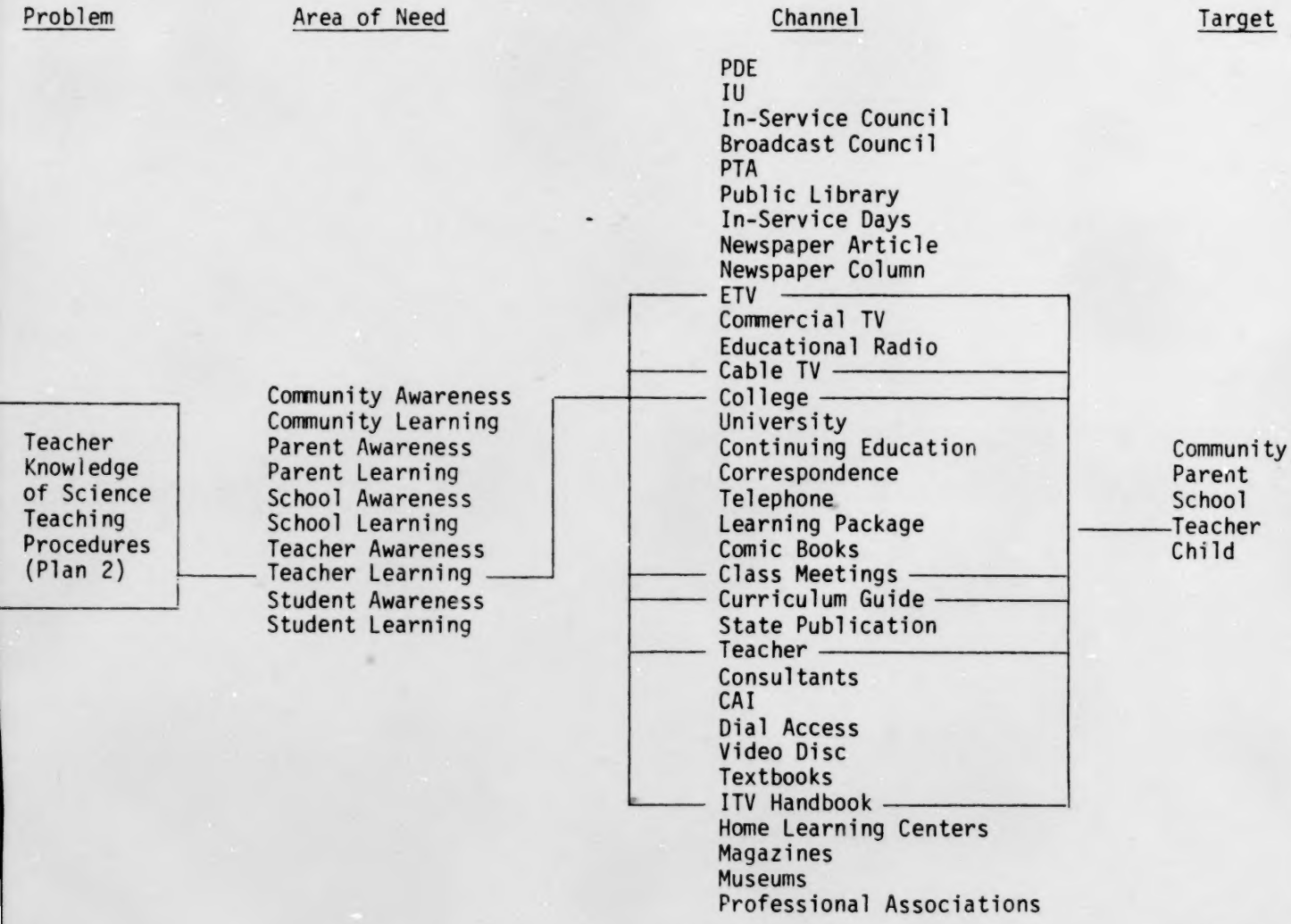
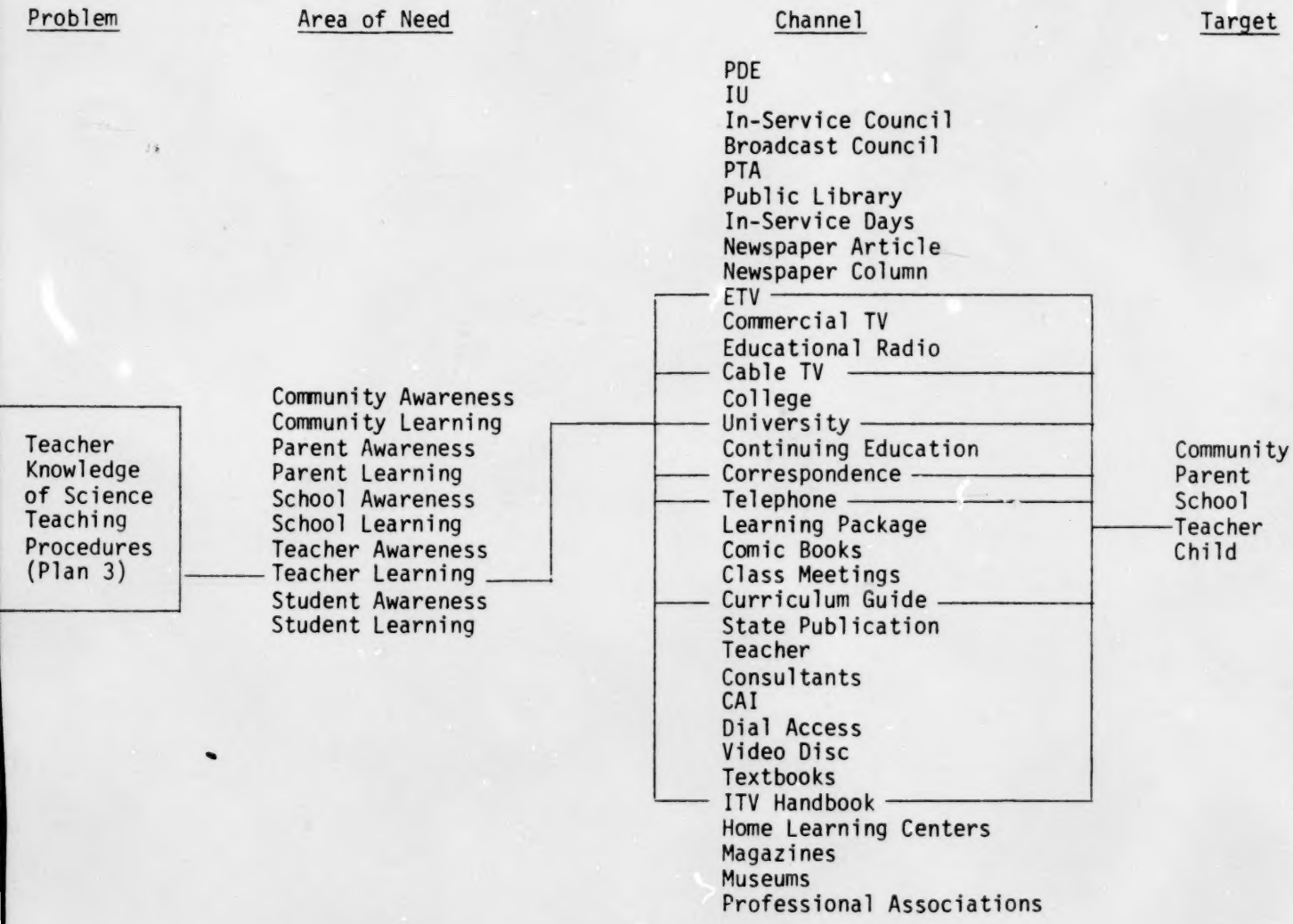


Table 4

SFTS INSTRUCTIONAL SYSTEM



system of computerized diagnosis and prescription, teachers, schools, and school districts will be able to evaluate the status of their elementary school science program and gain information on alternative methods by which these programs might be improved.

Through these procedures, the dream of a statewide system for instructional improvement is making major strides from being just a vision, to the reality of vigorous action.

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